K-12 Distance Learning and its Effects on Academic Achievement and Student Engagement

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Introduction

Distance learning programs, also referred to as online classes or virtual education, have grown in popularity and complexity in recent years. In postsecondary environments, distance learning has gained attraction due to its flexible, asynchronous class structure and embracing of modern technology. According to the National Center of Education Statistics, in the fall of 2015, 5.95 million students in degree-granting postsecondary institutions across the country were enrolled in at least one distance learning course. Of this amount, 2.87 million students were enrolled exclusively in online classes. The option to enroll in distance learning education may have proven popular for college students, but is it possible to effectively integrate this flexible and modern tool into a K-12 setting while still maintaining positive academic growth?

For K-12 advocates, one of the major arguments put forth for adopting distance education is a response to teacher shortage concerns, an issue which has been documented across the country. The Illinois Association of Regional Superintendents of Schools released a mixed methods study in 2016 detailing how many school districts, particularly those in rural regions, actively struggled to hire qualified, licensed educators. The report identified how certain academic fields were much harder to fill with licensed/endorsed educators than others, the highest demand being for self-contained general education, special education, reading/English language arts, mathematics, and science, respectively. When isolating rural school districts, these same fields are also highly demanded, as well as a need for qualified career-and-technical teachers.
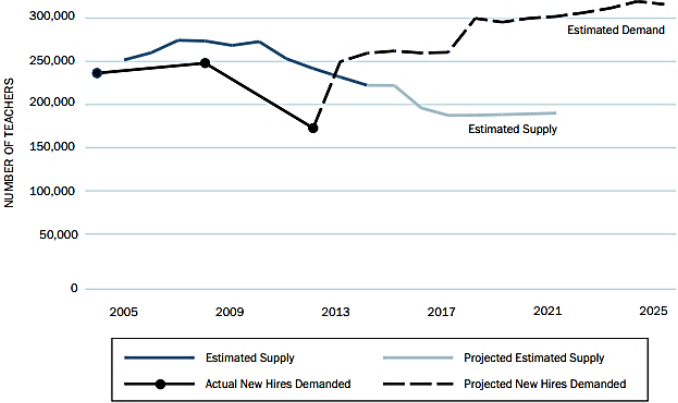

Figure 1
Projected Teacher Supply and Demand

Note: The supply line represents the midpoints of our upper- and lower-bound teacher supply estimates (see Figure 10 for full analysis).
Source: U.S. Department of Education, multiple databases (see Appendix A).

Q3. Have you noticed fewer qualified candidates applying for positions in your district?

	Rural/Urban Classification		
Response	Rural	Suburban	Urban
No	17%	37%	29%
Yes	83%	63%	71%
Grand Total	100%	100%	100%

Q4. How would you compare the quality of applicants this year from prior years?

	Rural/Urban Classification		
Response	Rural	Suburban	Urban
Candidates are worse	51%	32%	29%
About the same	45%	63%	71%
Candidates are better	5%	5%	0%
Grand Total	100%	100%	100%

Another 2016 study which analyzed teacher shortage data and its effects on K-12 education was produced by the Learning Policy Institute. This study evaluated national norms detailing why certain regions struggle with teacher retention and compared it to supply and demand statistics. Whether the issue be a lack of administrative support for new teachers, salary constraints, or limited in-class field experience for teacher candidates, the supply of qualified teachers is declining every year. According to the report, by the start of the 2018-2019 school year, there is projected to be a nationwide supply shortage of around 112,000 teachers.

With such shortages, schools need to look for alternatives that can compensate for the loss in full-time educators, and for many virtual education is proving a viable option. Current virtual education providers, such as the Illinois Virtual School, have for the last few years enrolled thousands of students in core subject courses as well as credit-recovery classes. The purpose of this report is to propose a plan that will help expose Illinois students, particularly those in rural school districts, to distance learning education, while evaluating how said enrollment impacts academic achievement, communication with instructors and classmates, and overall engagement in the subject being digitally taught.

"Between 2009 and 2014, the most recent years of data available, teacher education enrollments dropped from 691,000 to 451,000, a 35% reduction. This amounts to a decrease of almost 240,000 professionals on their way to the classroom in the year 2014, as compared to 2009," (Sutcher et. al., 2016).

Literature Review

Although distance learning has been utilized in schools for several years, one hesitation to the medium is a belief that the level of education provided will not be as rigorous as that found in a brick-and-mortar classroom. In a face-to-face environment, it can be argued it is relatively easier for an instructor to assess student comprehension of a subject matter by means of direct communication with their students or fielding questions in real time. Furthermore, it can be argued student interaction with classmates is more convenient in physical classrooms as students can verbally talk with one another to clarify the details of an assignment, discuss group work responsibilities and tasks, or form in-person study groups.

Nonetheless, there are students who prefer the environment of online classes and do not view distance learning as a poorer version of in-person instruction. A 2015 report by Aslanian Market Research and Learning House, the latter being a company which provides technical assistance to postsecondary intuitions with online course programs, analyzed the preferences a group of students expressed towards distance learning. In a sample size of 1,500 students, "Thirty-seven percent preferred a tutorial style with students completing tasks at their own pace and contacting an instructor with questions. Not far behind, 34% preferred an independent study model, with students studying at their own pace and not interacting

with an instructor. Twenty-nine percent preferred the instructor-led model, where an instructor takes students through their learning activities," (Clinefelter, 2015). Therefore, it is important to explore how online education engagement tools impact student learning and whether a student is best served in a completely online environment.

-Student Engagement-

A student's interest level in a lesson strongly relates to whether the student will retain the information being presented by an instructor. In a face-to-face setting, a teacher can assess in real time their student's engagement and be able to intervene with student-centered activities, such as Think-Pair-Share, Jigsaw, or Red Robin Reading. In a digital setting, an instructor is more reliant on online games, simulations, or synchronous telecommunication applications. These tools, also referred to as computer supported collaborative learning (CSCL), have been the subject of myriad research studies. *Future-Looking Conversations in CSCL* analyzed four such studies and commented on the international dialogue concerning CSCL's effectiveness, which happened to be a point of discussion at the 2016 International Conference of the Learning Sciences held in Singapore. One major claim by this study is distance learning education and the use of CSCL programs helps to promote an environment of personal student responsibility and allows for intrapersonal thought in a given lesson.

"Knowledge building is an important line of research in CSCL…The reflective assessment is designed so that students can develop metacognitive skills, such as planning, monitoring, and reflecting. The connections of knowledge are related to questions, ideas, and contributions to the knowledge community. These processes involve fact-seeking, exploration, negotiating and synthesizing as well as making simple claims, elaborations, explanations, meta-cognitive questions and statements. In the designed environment, a knowledge-connection analyzer is developed to support the students," (Ludvigsen et. al., 2016).

Other studies have analyzed how digital platforms can be utilized as a safer space for students to communicate with one another, as the action of typing on an interactive digital chatroom can help to partially disconnect from the types of stress some students experience in face-to-face conversations. *Disengaged Students and Dialogic Learning: The Role of CSCL Affordances,* a study which was praised for its subject matter in the Ludvigsen study, analyzed the improvements made when a CSCL tool was incorporated into a linguistics class. The study followed the progress of three students, each with a history of apathy towards schoolwork and constant behavioral disruptions. The study evaluated how the students participated in a traditional, lecture-based setting and compared it with the integration of a digital tool known as Argunaut.

The Argunaut program, "is a moderating interface that provides the moderator with online awareness tools and intervention facilities," (Schwarz & Slackmon, 2014). Unlike a typical chatroom blogspace, where a thread of messages is listed vertically one after the other, the Agunaut program allows students to post blog responses as textboxes scattered throughout a central "conversational space". Students pick from various textbox designs (signifying shorter or longer responses) and utilize different colored arrows to identify whether they agree, disagree, or are neutral with a post made by other classmates. The arrow system allows a student to visually direct their conversation and only comment on those discussion threads which interested them. In many ways this is similar to the subreddit function on the social media website Reddit, a function that may already be familiar to digital-native youths.

 A central theme throughout the study was the importance instructors should place in a student's voice. The researchers characterized student voices as a social act of personal identification and recognition. When a student feels their thoughts or interests are not being heard, they may turn to destructive external behaviors and resent the instruction being offered. By utilizing the Argunaut's digital space, however, the three students displayed a greater interest in the subject and in engaging with their classmates. The Schwartz and Slackmon study documents how after three separate rounds of Argunaut instruction, the three students progressively exhibited greater personal responsibility in respectfully responding to their classmates' posts, took the initiative to craft new discussion threads, and incorporated more formal writing structures in their posts without a reliance on direct intervention from the instructor.

"The conversational space functioned as a collective playground in which every contribution—or the lack of contributions (e.g., silence) – matters to all… CSCL affordances played a crucial role in this opening towards multivoicedness; among them are the suspension of immediate response, the elimination of prosody, a time to think things through, a less socially-signed environment and the 'general-addressee' effect. The very fact that the perception of the space and its meaning itself is not clearly defined, turns Argunaut into a sphere of potential transition and change," (Schwarz & Slackmon).
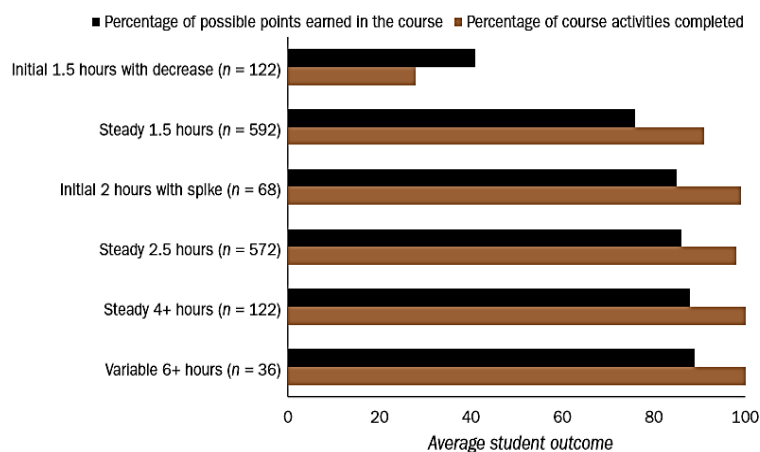
Finally, in terms of framing a research study design around student engagement, a 2016 report by the Regional Educational Laboratory-Midwest analyzed the state-run Wisconsin Virtual School and attempted to find a correlation between student login times and academic achievement.

REL Midwest video

The Regional Educational Laboratory-Midwest is one of ten education laboratories funded by the United States Department of Education, Institute of Education Sciences. The organization assists state education stakeholders with educational research data and technical support. Some of the areas REL Midwest have studied include closing racial academic gaps, teacher preparation, and educational technology resources. In Illinois, the group's previous research has centered around early childhood education reforms.

Figure 2. Most students in five of the six engagement groups earned a high enough percentage of possible points to pass their online course, though their engagement patterns differed, fall 2014

Legend:
- Percentage of possible points earned in the course
- Percentage of course activities completed

Categories (y-axis):
- Initial 1.5 hours with decrease (n = 122)
- Steady 1.5 hours (n = 592)
- Initial 2 hours with spike (n = 68)
- Steady 2.5 hours (n = 572)
- Steady 4+ hours (n = 122)
- Variable 6+ hours (n = 36)

X-axis: Average student outcome (0 to 100)

Figure 1. Student enrollments in Wisconsin Virtual School online courses followed one of six engagement patterns, fall 2014

Hours per week spent logged in to the online course

Lines:
- Initial 2 hours with spike (4 percent)
- Variable 6+ hours (2 percent)
- Steady 4+ hours (8 percent)
- Steady 2.5 hours (38 percent)
- Initial 1.5 hours with decrease (8 percent)
- Steady 1.5 hours (39 percent)

X-axis: Weeks in online course (1 to 21)
Y-axis: 0 to 12

The Wisconsin Virtual School, much like other state-run distance learning academies, provides asynchronous instruction for students. The program allows students to enroll in core curriculum classes, Advanced Placement courses, and credit-recovery classes. For this study, the researchers articulated three specific objectives, 1) to assess whether engagement patterns could be identified, 2) determine whether there is a difference in engagement between different gender groups and grade levels, and 3) determine how engagement patterns correlate to earning points and course completion levels. From August 2014 to February 2015, the Wisconsin Virtual School collected login times, points earned, and completion rate data from 1,512 students. The study then used a group-based trajectory modeling methodology to illustrate positive and negative correlations amongst the different groups being analyzed.

"To answer the research question on the association between student engagement and course outcomes, regression analysis that accounts for how students are similar within online courses was used; it compared the outcomes of students displaying the most common engagement pattern with students displaying each of the other engagement patterns, while statistically adjusting for student and course characteristics," (Pazzaglia et. al., 2016).
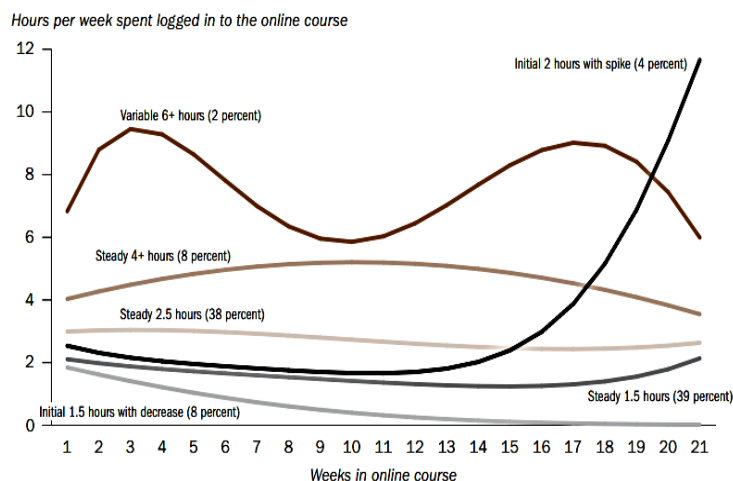
In the end, the study identified six unique study/login patterns. For students who initially allocated an average of 1.5 hours of weekly online study and then decreased this amount over time, their final scores were the poorest, whereas the strongest final scores were achieved by students with an initial weekly study time averaging 2 hours who then gradually increased their regular login times. Despite obvious differences in the amount of average studying time students afforded their online course and regardless of the student's gender, the REL Midwest report found five of the six pattern groups earned enough final points to pass their selected course. Despite these findings, the researchers were upfront in stating this particular study does contain a number of limitations and potential oversights which could draw question to the final results. For example:

Study Limitations and Extraneous Variables

- Using student login times can be misleading. A student can be logged onto an online course, but not necessarily dedicate the entirety of that time to studying (However, the WVS program does automatically log a student out after five minutes of inactivity).
- A student's interest level or prior knowledge of a subject area could have impacted their final scores.
- A student's home-internet access could have impacted weekly login times.

-Rural Schools and Virtual Education-

As was referenced previously, virtual education has been especially attractive to rural school districts. The realities of national teacher shortages and limited funding resources restrict rural schools from regularly acquiring qualified educators or offering career-oriented courses. This said, a 2016 study by the Michigan Virtual Learning Research Institute wanted to confirm whether rural school districts respond more positively to virtual education opportunities. The study analyzed the data from seven virtual schools in seven states; Georgia, Massachusetts, Michigan, New Mexico, North Carolina, South Carolina, and Wisconsin. In assessing academic achievement, the study *Educating Students Across Locales: Understanding Enrollment and Performance Across Virtual Schools* made a distinction between pass and completion rates. Being that the study was evaluating virtual schools from multiple states, each with different definitions of course passage (i.e. 70% versus 60%), the study created a universal definition for completion rate (how many students finished the course, pass or fail) and pass rate (how many students who completed a course earned the minimum amount of points to pass said course). The study also utilized a regressive analysis approach to compare rates amongst similar locale codes (as defined by the National Center for Education Statistics), ethnicities, and genders.

What was surprising about the study's results was how dissimilar they were state to state. "We can conclude from the descriptive statistics presented in each of the case studies and from the statistical analyses of locale and gender and locale, that there is no common performance scenario that spans across all virtual schools. That is to say that each virtual school, its diverse geographic context, and the students it serves all interact to produce unique profiles of student success. There certainly were some similarities that are worth noting; for example, the city locale was descriptively the lowest performing locale for five of the seven virtual schools. Conversely, there was little consistency among the highest performing locale, with suburb, town, and rural filling each of the top three spots fairly evenly. The rural locale (along with suburb) was ranked everywhere from lowest to highest performing across the seven virtual schools, speaking again to the contextual and geographic variance of each virtual school," (DeBruler & Bae, 2016).

State	Statewide (2013-14)		Virtual School (2013-14)
	% Rural Districts	% Rural Students	% Rural Students
Georgia	52.0%	30.0%	18.0%
Massachusetts[26]	23.0%	10.0%	23.0%
Michigan	44.0%	21.0%	25.0%
New Mexico	60.0%	20.0%	50.0%
North Carolina	50.0%	46.0%	38.0%
South Carolina	42.0%	29.0%	31.0%
Wisconsin	56.0%	23.0%	39.0%

In a separate study also published by the Michigan Virtual Learning Research Institute, researchers took another look at the relationship between rural schools and virtual education. However, instead of focusing on academic achievement as defined by overall points earned in a course, the mixed methods study *Transforming Rural K-12 Education Through Blended Learning: Student Perspectives* explored more qualitatively how students respond to virtual education as an academic option. The study collected questionnaire responses from 96 rural high school students and conducted interviews with eight separate rural students, all of whom had enrolled in distance learning courses through the Idaho Digital Learning Academy.

The three main objectives of this study were to determine how virtual education taught with blended learning techniques impacts overall student academic achievement, engagement, and communication with their peers and instructor. Similar to the Ludvigsen study, the student responses on average displayed a liking to greater independence, an easier ability to consort outside sources, and a greater understanding of the content being taught. In terms of the blended learning approach, or virtual education instruction which divides classroom management between an online instructor and a brick-and-mortar instructor, the study reports most students strongly connected with this approach.

"Throughout the interviews, it was clear that students still want interaction with teachers in the blended environment. All participants reported that teachers set the agenda for the courses, designated due dates, and proposed projects. The roles of their teachers change in this modality as the students reported they wanted teachers to check for understanding, guide them through the process of projects or assignments, and keep them on task. They exhort teachers to stay engaged with students in the learning process and 'not stay behind the computer,' but still walk around and give one-on-one attention," (Werth et. al., 2016).

**Table 8. Comparison of Student Teacher Response to Academic Skills in Blended Learning**

	Student Perception		Teacher Perception	
	Same Before and After Blended Bearning	Better or Much Better After Blended Learning	Same Before and After Blended Learning	Better or Much Better After Blended Learning
Mathematics skills	43%	10%	16%	26%
Reading skills	38%	36%	29%	53%
Understanding what I have read	31%	38%	29%	53%
Grades on homework	39%	39%	33%	54%
Grades on tests	40%	37%	33%	54%
Taking responsibility for my own learning	33%	45%	15%	68%
My ability to persevere when I am struggling	38%	36%	38%	53%
My ability to locate helpful resources on my own	27%	56%	26%	67%
My ability to analyze what I learn in class	36%	36%	31%	56%
My ability to apply what I learn in class to real world problems	40%	33%	N/A	N/A

Table 10. Comparison of Student and Teacher Response to Engagement in Blended Learning

	Student Perception		Teacher Perception	
	Same Before and After Blended Bearning	Better or Much Better After Blended Learning	Same Before and After Blended Learning	Better or Much Better After Blended Learning
The behavior of other students in class	57.0%	15.1%	40.0%	52.5%
The time I was actively working during class	30.2%	33.7%	30.0%	57.5%
My interest in class work	40.7%	29.1%	35.0%	55.0%
My interest in participating in class	41.9%	29.1%	35.9%	56.4%
My own behavior in class	66.3%	19.8%	40.0%	52.5%
My class attendance	76.2%	9.5%	80.0%	12.5%
My general excitement during class	49.4%	24.7%	47.5%	42.5%
My excitement to complete homework/complete assignments out of class	52.3%	19.8%	50.0%	42.5%
The overall quality of my classwork	51.2%	32.6%	42.5%	47.5%
My confidence in my abilities	48.8%	30.2%	27.5%	62.5%
My enjoyment of school	50.0%	20.9%	38.5%	53.8%
Community building in class	58.1%	18.6%	41.0%	43.6%
My ability to get one-on-one help from my teacher	44.2%	25.6%	17.9%	74.4%
My motivation in class	48.8%	27.9%	35.9%	56.4%

Table 12. Comparison of Student and Teacher Response to General Uses in Blended Learning

|	Student Perception		Teacher Perception	
	Same Before and After Blended Bearning	Better or Much Better After Blended Learning	Same Before and After Blended Learning	Better or Much Better After Blended Learning
Helping me think deeper about topics	32.6%	50.0%	30.8%	61.5%
Helping me determine what I have learned and what I haven't learned	31.0%	49.4%	17.9%	74.4%
Getting quick feedback on how I am doing in class	27.9%	45.3%	23.1%	71.8%
Getting resources when I miss class	31.0%	49.4%	12.8%	82.0%
Allowing me to work at my own pace	27.9%	45.3%	7.9%	89.4%
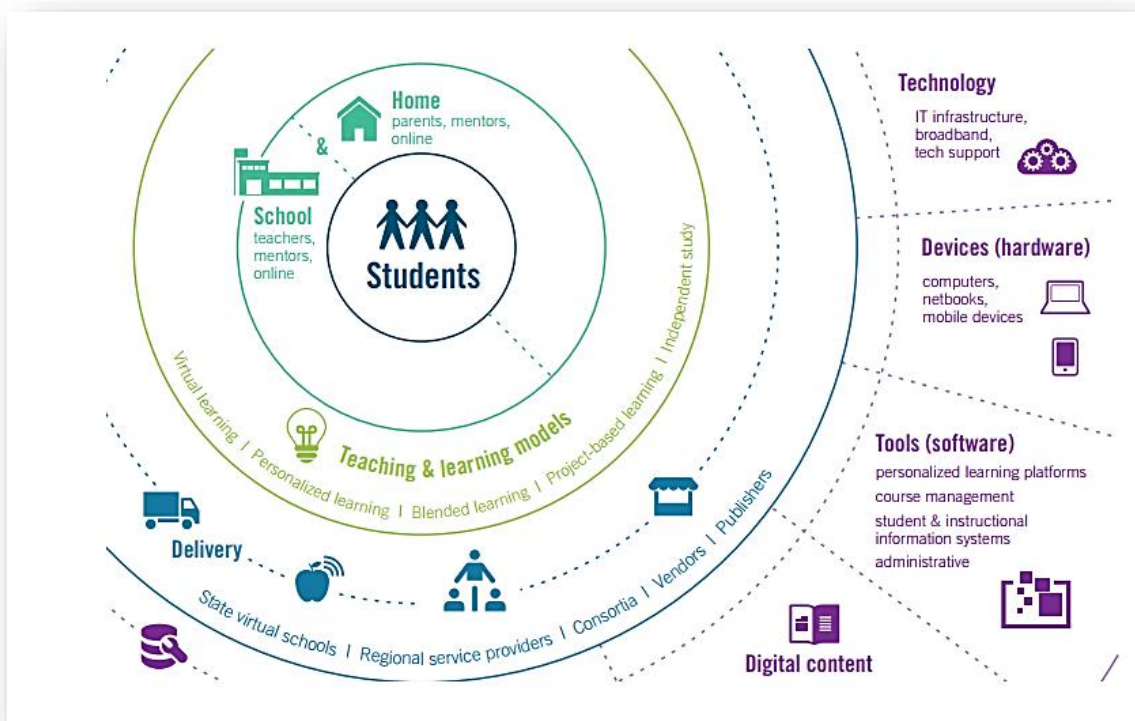
-Asynchronous Online Instruction-

Although the Werth study provided myriad examples of students who expressed positive views toward blended learning virtual education, an endorsement of the approach was not unanimous amongst the students evaluated. Of the 96 students who completed the questionnaire, seven expressed a disinterest with blended learning and went so far as to advise students against enrolling in such a course. Werth and the other researchers do articulate in the report how blended learning is only successful when an effective intervention design is executed for teachers and students beforehand.

"In addition to change itself, teacher- and student-related dynamics can hamper blended learning efforts. Documented challenges with blended learning include the time to implement a new teaching technique and the technological challenges that emerge within educational environments (Educause, 2012; Horn, Gu, & Evans, 2014; Kenney & Newcombe, 2011). Werth and Werth (2013) indicate that in technology implementation efforts, the three most common barriers teachers face are access to technology, time to learn and experiment with the technology, and training. This triad of barriers — technology, time, and training — all must be addressed for successful implementation," (Werth).

Regardless of the teaching methods, be it blended learning or online-only, asynchronous or synchronous instruction, state-run virtual schools are attracting more and more American students. A 2015 national study by the International Association for K-12 Online Learning (iNACOL) documented the positive impact virtual education has had for rural, homeschool, and credit-recovery students across multiple states. In places like Florida, the iNACOL report demonstrated the academic dividends being produced by virtual education opportunities compared to traditional, face-to-face instruction.

"Florida Virtual School (FLVS) is both the oldest statewide Internet-based high school and certainly the largest. FLVS students bested the state average in End-of-Course (EOC) exams taken by Florida students in spring of 2015. The benchmark tests measure how well students have mastered course material. As the state requires more EOC assessments, students in FLVS Part-Time and FLVS Full-Time programs continue to surpass the average set by students in traditional schools," (Gemin et. al., 2015).
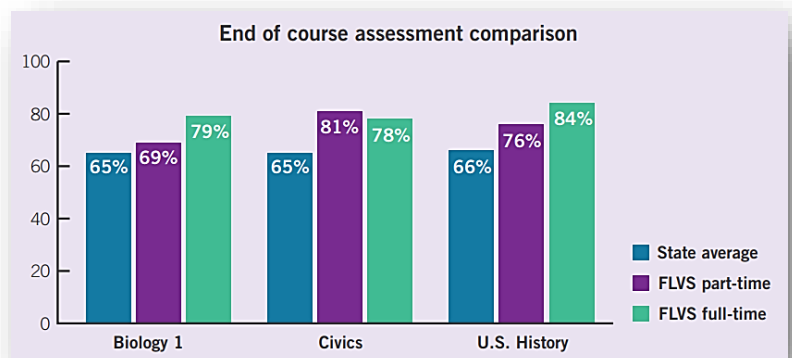
Research Design Proposal {Prepared October 2017}

In 2017, Senate Bill 1947 was signed into law in an attempt to dramatically reform Illinois's K-12 funding formula. The bill was the byproduct of years of academic research and legislative maneuvering. In the fall of 2016, the Governor established the School Funding Reform Commission, a bipartisan group made up of legislators, researchers, and education stakeholders with the goal of creating a funding formula that would address both adequacy and equity throughout the state. A good number of the commission's suggestions can be seen in the final bill, but it does not mean all instances of K-12 education inequities have been addressed. In terms of adequacy, Illinois still faces a problem concerning Advanced Placement course access.

The accompanying map clearly demonstrates a divide where students who reside in northern, mostly-urban districts are taking more AP exams compared to students who attend more rural schools in Central and Southern Illinois. For many of these school districts, the realities of teacher shortages and limited resources preclude students from enrolling in AP courses. Furthermore, this problem is not isolated to Illinois. A study by the University of New Hampshire analyzed 2012 data collected by the U.S. Department of Education and other sources to illustrate the AP disconnect occurring between rural and urban schools. "We find that rural students have considerably less access to AP courses than their peers in more urban areas: 47.2 percent of rural school districts have no students enrolled in AP courses, compared with only 20.1 percent, 5.4 percent, and 2.6 percent of town, suburban, and urban districts, respectively," (Gagnon & Mattingly, 2015).

Therefore, the foremost objective for an Illinois virtual education study should be to evaluate the medium's potential benefits for students, particularly those in rural areas with limited access to AP education.

Illinois Public Schools
AP® Participation by District: Class of 2014
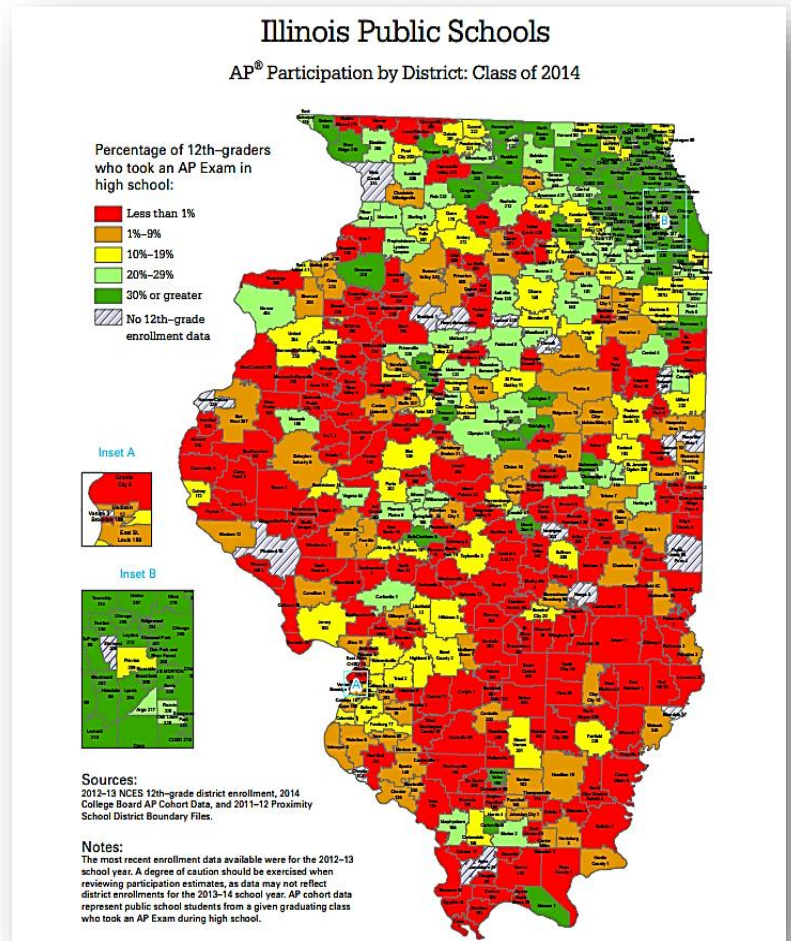
-Procedure-

The research study will incorporate a randomized, pretest-posttest-control-group design. Similar to the DeBruler and Bae report, this study will also use school district's locales as an independent variable, in addition to the mode of instruction independent variable (online education versus face-to-face instruction). This is a notable inclusion as Illinois is an incredibly diverse state, and it is therefore important to identify how the introduction of virtual education opportunities influences, for example, a student in Peoria compared to a student in Chicago, Elgin, or Marion.

The study will place participants in one of six cells; divided by rural, suburban and urban locales and the two modes of instruction. Also like the DeBruler and Bae study, definitions for rural, suburban, and urban will be based on the locale codes defined by the

National Center for Education Statistics. Each cell will consist of three groups of students from three different schools. For example, in the Rural-Online Education cell, one could have a sample size of 12 students divided into three groups of four, with each group placed in three different rural schools. Therefore, using this example of a 12-student sample size cell in a 2 x 3 arrangement, 36 total students would enroll in online classes (the experimental group) and an additional 36 students would receive instruction in a traditional, brick-and-mortar fashion (the control group), meaning a total sample size of 72 students and 18 schools.

In terms of dependent variables, the study will analyze main effects on academic achievement and student engagement. Student engagement will be measured by a mixed questionnaire delivered to students at the beginning and end of the course. Among other questions, the questionnaire will require students to comment on their respective instructional method, their preferred method of learning, an assessment of their communication with their classmates and instructor, and their overall understanding of the unit of instruction before and after.

Academic achievement will be measured by pass rate scores on the final exam. Unlike the study which analyzed academic achievement within the Wisconsin Virtual School, this study will exclusively look at achievement scores in a virtual Advanced Placement course. The WVS study researchers recognized in their "limitations section" of their report that focusing on different course genres may have distorted some of the final results in terms of student engagement data.

"The study sampled student enrollments in Advanced Placement courses, core courses, and elective courses because these courses represent the majority of Wisconsin Virtual School enrollments. The findings are not generalizable to credit recovery courses because they were excluded from the sampling plan due to their shortened, 12-week timeline. It also is possible that the findings do not represent the engagement patterns or relationships between engagement and course outcomes evident in other online learning programs," (Pazzaglia).

Finally, execution of the study will be reliant on a partnership between the Lt. Governor's Office, the Illinois Virtual School (IVS), and multiple Regional Offices of Education (ROE). IVS is a state-funded program administered through the Peoria County ROE and has offered online education opportunities since 2009. According to the organization's annual report from 2016, the school offers 138 semester-long courses, including 26 Advanced Placement and five foreign language courses. In addition, IVS offers 26 semester-long credit-recovery courses and multiple professional development opportunities. All courses are taught by Illinois-licensed K-12 teachers. Since 2010, IVS has established at one point in time partnerships with 516 schools. Although most of the classes offered are asynchronous, online-only, Illinois Virtual School does offer a handful of blended learning courses, such as the *Math: Right from the Start!* course.

To fund the research study, the Lt. Governor's Office will utilize earmarked funds from the Governor's Rural Affairs Council to cover the $225 semester course fees for those students selected in the experimental group. The Lt. Governor's Office will also communicate with ROEs representing rural, suburban, and urban areas and identify which schools will participate in the study. Randomly selected sample sizes of students will then be selected for analysis in preparation for the 2018 Spring semester. Pretest, posttest, and questionnaire data will be shared with the Lt. Governor's Office so as to be documented in a final report.

Results

-Changes from Proposed Research Design-

Although a majority of the elements articulated in the October 2017 research proposal were included in the final pilot program design, two major changes were made relating to student locale and total student sample size. With a majority of the pilot study's funding deriving from earmarked appropriations allocated to GRAC, it was determined to only utilize participants in rural school districts as opposed to comparing the results of participants in rural, urban, and suburban schools. The term "rural school" for this study was defined as high schools residing in Illinois counties classified as rural by the GRAC and the Illinois Institute of Rural Affairs. Using parameters defined by the federal Office of Management and Budget in 2003 (WIU, 2018), 66 of the 102 Illinois counties can be classified as rural or "nonmetropolitan".

However, for this study, the term "rural school" also applies to schools in smaller towns/cities within metropolitan counties. This additional definition applies to the following participating schools; Kankakee High School, Georgetown-Ridge Farm High School, and Elmwood High School. Each of these schools reside in a town or city with a total population under 30,000 and are further than 10 miles away from any urban locale.

The Experimental Group included participants from the following schools and counties; Altamont High School (Effingham), Central A&M High School (Shelby), Georgetown-Ridge Farm High School (Vermillion), Illini Central High School (Mason), Kankakee High School (Kankakee), Knoxville High School (Knox), Orangeville High School (Stephenson), Pope County High School (Pope), Tri-Point High School (Livingston), and Quincy High School (Adams).

The Control Group included participants from the following schools and counties; Charleston High School (Coles), Elmwood High School (Peoria), Kankakee High School (Kankakee), Sterling High School (Whiteside), and United High School (Warren).
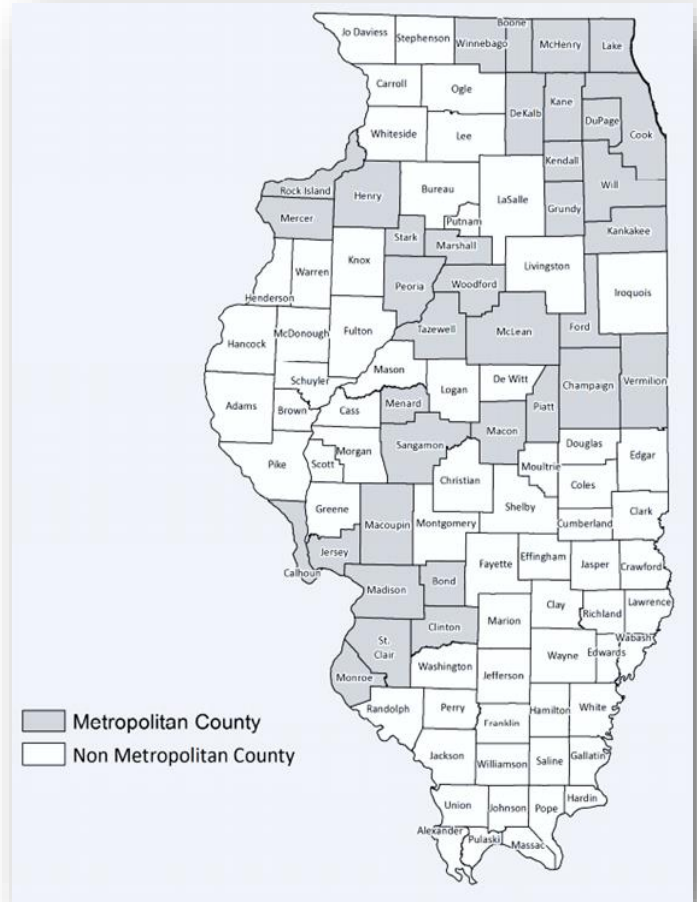
The total student sample size also differed greatly from the initially proposed 36 and 36 student groups. The Lt. Governor's Office engaged in recruitment efforts from November 2017 to January 2018. At the start of the pilot program study in January, the Experimental Group possessed an initial sample size of 76 students, with an initial 201 students in the Control Group.

Experimental Group

-Quantitative Data (Scores)-

Participants in both the Experimental and Control Groups were assessed using pretests and posttests and the official AP exam. The pretests and posttests were designed to be an abridged version of the official AP exam, and therefore utilized publicly available questions that appeared in the 2017 examinations. Each of the tests were comprised of 10 multiple choice questions and 1 short essay prompt. Multiple choice

questions were worth 1 point each, and the short essay was worth 3 points, for a total score of 13 points.

Pretests were administered to students early in their course in mid-January and were submitted to the Lt. Governor's Office around early-February. Posttests, which utilized the same questions presented in the pretests, were administered in mid-April, with scores sent back shortly before the official AP exam on May 10.

The Lt. Governor's Office received pretest scores from 49 students. The average score was 5.80 out of 13 available points. The median score was 5 points, and the mode score was 4 points.

For the posttests, the scores of forty students were received. The average score in this exam was 8.60 out of an available 13 points. The median score was 9 points, with a mode score of 7 points.

On May 10, 47 students in the Experimental Group participated in the official AP exam for U.S. Government and Politics. Although an argument can be made participants improved in their understanding of the content based on the increased average score on the posttests, the final scores on the official AP examinations were less than promising.

The maximum score on any Advanced Placement exam is 5. The average score for the Experimental Group participants was 1.51. Both the median and mode scores were 1. Five students earned a passing score of 3 or above, or 11% of all participants in the Experimental Group. No student earned a perfect 5 score.

Even when these scores are compared to statewide and national statistics (College Board, 2018), the scores are still below average across the board. In the 2018 AP U.S. Government and Politics examination, College Board reports a total of 13,754 test-takers from across Illinois. Of this population, 6,438 identified as "male" and 7,316 identified as "female". The average score for Illinois participants was 2.82. When broken down by sex, the average score for Illinois males was 2.93, and an average score of 2.72 for Illinois females.

	AP SCORE	GOVERNMENT & POLITICS U.S.	GRADE LEVEL
ASIAN	5	317	9/10
	4	288	11
	3	439	12
	2	312	<9
	1	154	NOT HS
	T	1510	TOTAL
MEAN SCORE		3.20	
BLACK	5	30	9/10
	4	57	11
	3	158	12
	2	208	<9
	1	389	NOT HS
	T	842	TOTAL
MEAN SCORE		1.97	
HISPANIC/LATINO	5	184	9/10
	4	260	11
	3	605	12
	2	779	<9
	1	1170	NOT HS
	T	2998	TOTAL
MEAN SCORE		2.17	
WHITE	5	1372	9/10
	4	1289	11
	3	2394	12
	2	1783	<9
	1	831	NOT HS
	T	7669	TOTAL
MEAN SCORE		3.08	
ILLINOIS TOTAL	5	2020	9/10
	4	2011	11
	3	3805	12
	2	3245	<9
	1	2673	NOT HS
	T	13754	TOTAL
MEAN SCORE		2.82	

In terms of the population who earned a passing score of 3 or above, Illinois reported 7,836 individuals. This equates to a passing rate of 57%. When broken down by sex, 3,949 individuals identified as male (61% passing rate), and 3,887 identified as female (53% passing rate).

When compared to national numbers, Illinois's statewide results proved above average. Across the United States, 325,190 individuals participated in the AP U.S. Government and Politics examination. The average score was 2.70. Of this population, 151,183 identified as male and earned an average score of 2.84. 174,007 identified as female an earned an average score of 2.58.

Across the nation, 172,095 individuals earned a passing score of 3 or above, or a passing rate of 53%. The average scores by gender was a population of 87,262 who identified as male (58% passing rate) and 84,833 who identified as female (49% passing rate).

In addition to the different examination data, participants in both the Experimental and Control Groups were also given an opportunity to articulate their overall experience with their respective courses in a questionnaire format. Beginning in mid-April, students were offered a link to a mixed questionnaire using the online service SurveyMonkey. The questionnaire was comprised of 40 questions designed to gauge responses to such issues as prior knowledge, personal understanding levels before and after, and an assessment of a participant's level of communication between their instructor and classmates. The Lt. Governor's Office received a total of 219 survey responses from all group participants, 52 responses were from the Experimental Group.

One of the first elements that deserves to be explored to better provide context on why participants in the Experimental Group performed poorly on average is to assess prior knowledge, both in terms of the course content and a familiarity with online education. Of the 52 Experimental Group participants, 46 answered this was their first time taking an Advanced Placement course. Thirty-three participants also answered this was their first exposure to an online class. In other words, of the individuals who were in the Experimental Group and completed the questionnaire, 88% had never taken an AP course before and 63% possessed no prior experience with distance education.

Along with prior knowledge, it is also important to assess the level of motivation students felt towards their coursework during the process. In response to the question *Did you feel MOTIVATED while taking your respective AP course?* 24 individuals--almost half of the Experimental Group respondents--answered "No." When allowed the opportunity to explain their answer in one of the many open-ended comment boxes dispersed throughout the survey, most respondents alluded to either a personal disinterest in the course subject matter or a frustration with the demanding workload. Comments relating to the time-consuming workload were also expressed by a number of the corresponding schools' faculty representatives.

This lack of motivation can arguably be seen in the overall decrease in average study times. Within the survey, participants were prompted to assess the average amount of time they allocated to studying for their AP course each week. Respondents were allowed options as low as "less than 1 hour" to "greater than 5 hours." When asked how much time they dedicated near the beginning of the semester, 13 respondents answered "3-4 hours" with two sets of 11 respondents answering "2-3 hours" and "5+ hours." However, when asked to assess their current time allotment, the most popular responses were for "less than 1 hour" and "1-2 hours," with the "5+ hours" option only being identified by four individuals.

Despite a compelling lack of motivation, a majority of students expressed their understanding of the course's content had improved throughout the semester. Specifically, 46 respondents reported a growth in their personal comprehension from the beginning to the end of the course, with 23 expressing a "strong" or "very strong" level of understanding by the end of the spring semester. Only two respondents expressed their level of understanding had decreased from the start of the year.

Notably, when evaluating the relationship between comprehension of the course content and study time allocation, there were no discernable patterns which highlighted causality. For example, for students who assessed their level of understanding at the end of the course was "strong" or "very strong", their weekly study rates ranged from less than 1 to over 5 hours. In many ways, these results lend themselves to the conclusions reached in the Regional Educational Laboratory-Midwest study which analyzed study rates of students in the Wisconsin Virtual School, a report which found little correlational difference between study times and final academic performance.

-Dropouts-

One element in the questionnaire that was specifically designed for participants in the Experimental Group was an ability for those students who had dropped out of their respective online course to explain their

Evaluation of course structure and difficulty	Experimental				Control			
	Strongly Agree	Agree	Disagree	Strongly Disagree	Strongly Agree	Agree	Disagree	Strongly Disagree
It was easy to find information I needed in the course	1	27	19	1	12	138	12	0
The activities in this course made me think and helped me learn what I needed to learn	2	32	14	0	17	134	10	1
The course activities were too difficult	0	12	36	0	0	22	132	8
The course activities were too easy	0	3	45	0	2	22	131	7
The course activities were appropriate for my level of understanding	1	32	15	0	8	144	10	0

reasonings for leaving. In total, over 20 students dropped out of the Illinois Virtual School course, with a majority leaving within the first few weeks of the semester. The Lt. Governor's Office received survey responses from ten students who had dropped out of their online class. Of this group, two students had previously enrolled in an Advanced Placement course, and only one had prior experience with distance learning.

Similar to responses expressed by other participants in the Experimental Group who completed their coursework, these students articulated a frustration with what they believed to be an unforeseen level of work and time that went into the course. One student expressed, "I felt too preoccupied and busy and as I went through the course the deadlines made me feel like I wouldn't be able to get it done in time." Another student wrote, "it took me from 4 p.m. to midnight to complete the assignments that had to be done by midnight the first day and the website was confusing."

Much like other participants in the Experimental Group, this group of students pointed to their lack of interest in the subject matter, and explained how the online class assignments did not effectively appropriate time for other opportunities, such as extra-curricular activities or after-school employment. One student wrote they felt the online experience, "just put a damper on my mood when I had to work on it. It also wasn't a particular subject I was interested in." Another responded, "it was a lot of work, due next day, after next day, and I still had a lot of homework in other classes, along with a job, and band. Therefore, it was hard to keep up with all the work and readings." Of the students who answered the survey question *Do you prefer taking courses ONLINE or IN-PERSON? (Explain your answer)* all expressed a partiality for in-person instruction.

Despite these criticisms, many participants, both those who had dropped or remained enrolled, expressed an overall fondness with elements of the distance learning design and their level of communication with their instructor and classmates. In response to the survey prompt, "My teacher was available and easy to contact", 43 individuals answered either "agree" or "strongly agree". Additionally, a number of respondents commented on having a mostly positive level of communication with their instructor and classmates, appreciated the ability to be challenged academically, and mostly found it easy to utilize outside resources in order to help complete or further understand assignments.

Even one of the participants who dropped out of the course early commented, "I liked the discussion boards, I thought it was nice to see every other students' perspective on the subject at hand…It helped motivate me for college, because I know a lot of schools are moving to a lot of computer-based work, so it was nice having that experience." In the end, nine students in the Experimental Group expressed a preference for online education, and 25 answered they would recommend this course to others.

Control Group

-Quantitative Data (Scores)-

Although not the priority focus of this study, it was important to establish a baseline and evaluate quantitative and qualitative date from those students who took their AP course in a traditional, face-to-face setting. The Lt. Governor's Office received pretest scores from 195 students. The average score was 6.58 out of 13 available points. The median score was 6 points, and the mode score was 7 points.

For the posttests, the scores of 189 students were received. The average score in this exam was 9.81 out of an available 13 points. The median score was 10 points, with a mode score of 11 points.

In total, 110 students in the Control Group participated in the official AP exam for U.S. History. Despite not being a completely parallel comparison between the Experimental and Control Groups, the Lt. Governor's Office decided to evaluate the scores of participants in AP U.S. History classes for two primary reasons. Unlike the slightly esoteric AP U.S. Government and Politics, AP U.S. History boasts greater existing representation in Illinois brick-and-mortar schools, thus the act of securing willing participants was made much easier. Furthermore, AP U.S. History was determined an appropriate substitute control as it retains an overarching study focus centered around a common subject matter, Social Studies.

	AP SCORE	US HISTORY	GRADE LEVEL
ASIAN	5	575	9/10
	4	691	11
	3	674	12
	2	534	<9
	1	306	NOT HS
	T	2780	TOTAL
MEAN SCORE		3.25	
BLACK	5	49	9/10
	4	142	11
	3	270	12
	2	358	<9
	1	853	NOT HS
	T	1672	TOTAL
MEAN SCORE		1.91	
HISPANIC/LATINO	5	271	9/10
	4	572	11
	3	1004	12
	2	1373	<9
	1	2116	NOT HS
	T	5336	TOTAL
MEAN SCORE		2.16	
WHITE	5	1923	9/10
	4	3173	11
	3	3474	12
	2	2682	<9
	1	1525	NOT HS
	T	12777	TOTAL
MEAN SCORE		3.10	
ILLINOIS TOTAL	5	2993	9/10
	4	4863	11
	3	5735	12
	2	5202	<9
	1	5071	NOT HS
	T	23864	TOTAL
MEAN SCORE		2.81	

In looking at the official AP results, participants in the Control Group scored a 1.86 average. The median score was 2, with a mode score of 1. Twenty-seven students earned a passing score of 3 or above, or around 25% of all participants in the Control Group. Three students earned a perfect 5 score.

Although participants in the Control Group performed slightly better than their Experimental Group counterparts, their overall average scores still fell below statewide and national mean rates. In the 2018 AP U.S. History examination, College Board reports a total of 23,864 test-takers from across the State of Illinois. Of this population, 10,780 identified as "male" and 13,084 identified as "female". The average score for Illinois participants was 2.81. When broken down by sex, the average score for Illinois males was 2.98, and an average score of 2.67 for Illinois females.

In terms of the population who scored a passing score of 3 or above, Illinois reported 13,591 individuals. This equates to a passing rate of 57%. When broken down by sex, 6,745 individuals identified as male (63% passing rate), and 6,846 identified as female (52% passing rate).

When compared to national numbers, Illinois' statewide results still proved above average. Across the United States, 497,290 individuals participated in the AP U.S. History examination. The average score was 2.66. Of this population, 225,784 identified as male and earned an average score of 2.81. 271,506 identified as female an earned an average score of 2.54.

Throughout the country, 257,280 individuals earned a passing score of 3 or above, or a passing rate of 52%. The average scores by gender was a population of 128,498 who identified as male (57% passing rate) and 128,782 who identified as female (47% passing rate).

-Qualitative Data (Survey Responses)-

One of the foremost differences that was expected between the participants in the Experimental and Control Groups was an exposure to Advanced Placement content and workload. This can be easily visualized in the "AP Success by District" map included on this page. Using data collected from test-takers in the 12th grade, six of the ten participating schools in the Experimental Group reside in school districts which reported less than 1% of their students earned a passing score of 3 or above in the 2015 AP examinations. Three schools are within districts which reported 1%-9% of their students earned passing scores, and one school is within a district where 10%-19% of their students passed in 2015.

Compare this to schools in the Control Group, and there is a distinct difference in the level of participation and performance. Of these schools, two are located in school districts which reported 1%-9% of their students earned passing scores, two are in districts which reported 10%-19% passing rates, and one is within a district which reported 20%-29% of their students attained passing scores in 2015.
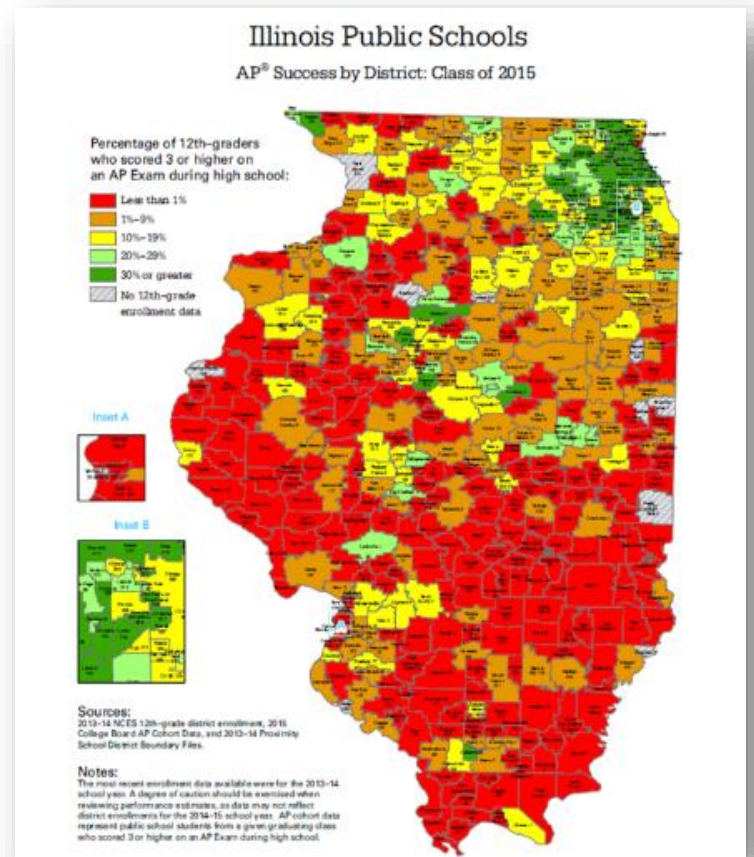
Therefore, it is not as surprising to find 101 students responded they had participated in Advanced Placement courses previously. Continuing in the theme of prior knowledge, 28 students responded they possessed a "strong" or "very strong" level of understanding of the AP course's content at the beginning of the course. This equates to 18% of all participants in the Control Group. who responded to the survey. Near the course's end in April, 129 individuals expressed a "strong" or "very strong" level of comprehension, or 81% of respondents. 129 respondents also assessed their level of understanding had improved throughout the semester. For context, only 7% of respondents in the Experimental Group expressed a "strong" level of prior knowledge at the beginning of the course, with no individual identifying as "very strong".

When asked about their overall AP course experience, several respondents in the Control Group highlighted their appreciation with the course material, engaging in classroom discussions, and the one-on-one communication they were able to have with their teachers.

Limitations of Study

When the original white paper for this pilot program proposal was created last year, there was a conscious decision to design a study which would analyze distance learning's potential in both academic achievement and individual engagement. Although efforts were taken to manage certain extraneous variables and allow for multiple comparisons, both in terms of testing and a control group, the results of this pilot program should not be considered wholly casual conclusions.

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One factor which complicated the process was the accelerated timeline that was available to find willing participants. Upon completion of the white paper in October 2017, the Lt. Governor's office began recruiting efforts for the study. The office leaned heavily on the advice and leads provided by the Illinois Association of Regional Superintendents of Schools and individual Regional Office of Education superintendents. Although the support provided by these individuals was incredibly welcoming, the act of identifying participants during a time of the year known for possessing a number of scheduled interruptions (i.e. Thanksgiving, Winter Break, and end-of-semester finals) made for a difficult process.

Due to this delay in securing participants, the pilot program had to somewhat forfeit an ability to scrutinize the selection process and instead emphasize a first-come-first-serve effort. An argument could be made that this resulted in a number of participants being selected who may not have been the best willing candidates, based on the number of dropouts that occurred in the Experimental Group. Furthermore, the notion of "random selection" is somewhat compromised, in that schools, in order to meet the fast-approaching deadline, were either able to secure the first group of students they could or, in the case of some schools in the Control Group, utilized an entire AP U.S. History class as a comparable sample size.

Another complication which occurred during the pilot program revolved around careful control of certain logistics. First, it was not made apparent until after the course had started that textbooks would need to be purchased for the online class. The Lt. Governor's Office had publicly articulated the financial support provided would be for IVS course entrance fees exclusively. College Board did eventually secure funding for textbooks, but this delay did frustrate certain students, and became a reason for some to drop out of the course early.

An additional complication arose near the end of the course when certain schools began inquiring where their students would be allowed to take the official Advanced Placement exam. Being that a number of participating schools in the Experimental Group had no previous experience with AP testing, they were initially unaware of the process needed to register their students and identify nearby testing centers or become a center themselves. Illinois Virtual School, College Board, and others were able to answer a number of these questions, but the incident nonetheless became another frustrating oversight.

The overall study design and execution was also not without its faults. As was previously highlighted in the "Control Group" section of this report, the comparisons between the Experimental and Control Groups was not wholly parallel as it compared scores and overall experience between students in AP U.S. Government and Politics and those in AP U.S. History. Although both Social Studies courses, their subject matter focus is widely different. In terms of the study's data collection, multiple opportunities were made to secure pretest and posttest and survey responses from all participants in both groups. Unfortunately, this process was not fully successful and therefore any conclusions reached using qualitative information will be based on incomplete data.

Finally, it was decided early on the questionnaires would stress student anonymity. This promise was kept and there was never an option for a survey respondent to report their name, thereby protecting their identity and their answers. Nonetheless, because there was no ability to identify names, it was not possible to correlate survey responses with their corresponding official AP scores to further measure overall academic progress.

Conclusion

The potential of distance education has and will continued to be explored. The abilities to engage in coursework at a self-determined pace and an ability to repeatedly review recorded lectures, 3D simulations, educational YouTube videos, and classmate blog entries on a single platform can be an incredibly helpful tool for learning. According to one student testimony from the survey responses, "I enjoyed the freedom to complete the lessons when I wanted to, and my ability to research as I learned and not have to wait until the end of the lesson to look up my questions." Nonetheless, it is improper to assume all young students are intimately familiar with computer-based learning, or that there is a preference for online instruction over a face-to-face environment.

The students who participated in this pilot program were, at the time, in grades 10 through 12, meaning they were born as early as 1999 and as late as 2002. Therefore, this population of students would be categorized within Generation Z. As a collective, individuals in Generation Z possessed greater exposure to computer-based activities at a younger age than earlier generations, making them on the whole digital-natives (Mastroianni, 2016). However, as was highlighted in this study, a familiarity with a form of technology does not always correlate to one's personal learning style.

In 1983, Harvard University professor Dr. Howard Gardner devised of the educational theory known as Multiple Intelligences, a theory which insisted children learn in distinct learning styles (Armstrong, 2018). Gardner identified eight unique methods individuals learn new information, including linguistically, spatially, kinesthetically, and logically-mathematically. Online education, when utilized effectively, can easily incorporate myriad forms of multimedia, written assignments, and other tools in to attract all students, regardless of their preferred learning style. When compared to outdated methods of teacher-centered, lecture-only instruction, it would appear distance learning would be a better method of engagement which would hopefully translate into more students retaining information longer. That said, for those students who identify more with interpersonal intelligence, or learning through group interaction, in-person instruction has an advantage which needs to be incorporated. As the same student above expressed later in the survey, "I am a tactile learner so the only time I would ever really learn something was when I had to type a paper and do in depth research, in a traditional class setting doing worksheets on paper and projects help me to learn."

As was noted in the "Limitations of Study" section, there could have been improvements in the selection process, securement of necessary classroom materials, and collection of student results. Certain changes to the study's research design could have improved an ability to effectively compare results between Experimental and Control Groups. For example, had the pilot program been designed for a full-year of instruction, it would have been possible to compare a course like AP U.S. History with AP U.S. History, as opposed to comparing a year-long course with a semester-long class.

Regardless of the outcomes of this report, the gaps in participation and performance in Advanced Placement examinations still exist within the state to the detriment of students in rural school districts. The primary message which should be taken away from this study is this is a first step into identifying and evaluating alternative routes for students to become involved in Advanced Placement work. Going forward, it may be concluded a blended learning approach, or a combination between in-person instruction and online assignments, is a more advantageous format for more learners. Regardless of what is found, it is important for any effective distance learning providers to uphold a number of the principles already practiced by organizations like the Illinois Virtual School, such as the requirement of hiring Illinois licensed educators to serve as instructors.

In closing, throughout the spring semester, Lt. Governor Sanguinetti traveled to different participating schools in the Experimental Group. In a press conference held at Pope County High School, one female student who was in the Experimental Group expressed her appreciation for this ability to enroll in an Advanced Placement course, an opportunity that had not been previously allotted when her family moved from the Chicagoland region to Southern Illinois. The student shared how she felt this pilot program meant her school was no longer being ignored, and how it would improve her chances to be accepted into a prestigious university. It was for this reason the pilot program was devised, and it will be for this reason efforts cannot cease in closing these academic gaps.

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Appendix

(Tests and Questionnaire)
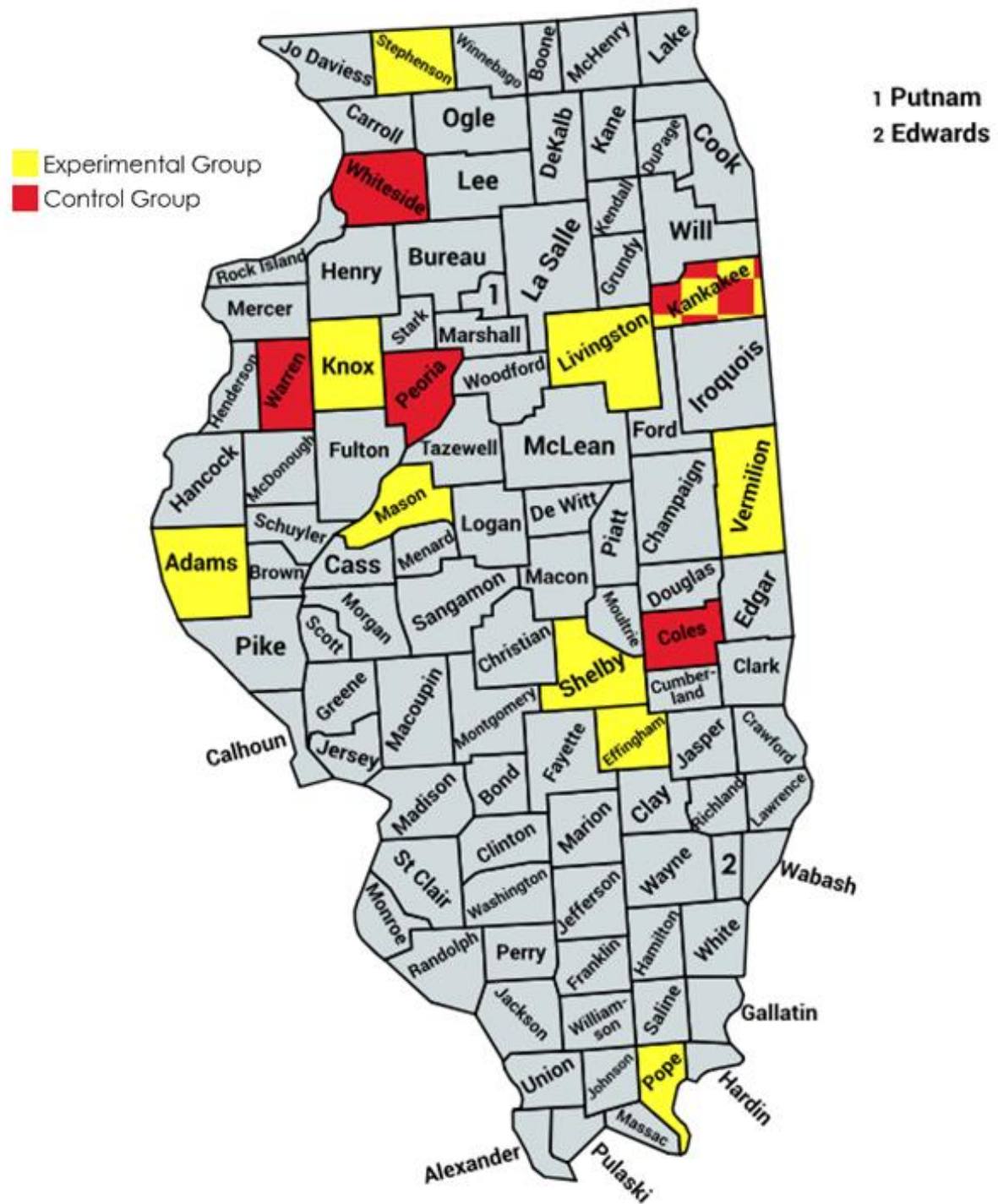
Question #1: Which of the following is an example of checks and balances, as established by the Constitution?

    a) A requirement that states lower their drinking age to eighteen as a condition of receiving funds through federal highway grant programs
    b) Media criticism of public officials during an election campaign period
    c) The Supreme Court's ability to overturn a lower court decision
    d) The requirement that presidential appointments to the Supreme Court be approved by the Senate
    e) The election of the President by the electoral college rather than by direct election

Question #2: A primary election in which voters are required to identify a party preference before the election and are not allowed to split their ticket is called

    a) an open primary
    b) a blanket primary
    c) a closed primary
    d) a runoff primary
    e) a presidential preference primary

Question #3: When selecting a vice-presidential candidate, a presidential nominee is usually concerned primarily with choosing a running mate who

    a) has significant personal wealth
    b) adds balance and appeal to the national ticket
    c) comes from the same ideological wing of the party as the President
    d) can serve as the most important domestic policy adviser to the President
    e) can effectively preside over the Senate

Question #4: The primary function of political action committees (PAC's) is to

a) serve as fund-raising organizations for challengers
b) provide members of Congress with unbiased information regarding proposed legislation
c) consult with the President regarding domestic policy
d) encourage broader participation in politics among the electorate
e) raise campaign funds to support favored candidates

Question #5: The role of a conference committee in Congress is to

a) hold hearings on proposed legislation
b) oversee the actions of the executive branch of the government
c) decide which bills should be considered by the full Senate
d) conduct hearings that make information available to the public
e) reconcile differences in bills passed by the House and Senate

Question #6: The most important source of the Supreme Court's caseload is

a) its original jurisdiction
b) its appellate jurisdiction
c) instruction from the solicitor general
d) the special master's certification of cases for review
e) Congress' certification of cases for review

Question #7: Presidents have had the most success in changing the direction of decisions of the federal judiciary by

a) threatening to ask Congress to impeach specific judges
b) using the media to build consensus for the President's position
c) requesting that Congress reduce term of office that judges may serve
d) using the appointment process to select judges with judicial philosophies similar to those of the President
e) pressuring Congress to pass the appropriate legislation to override judicial opinions

Question #8: Congressional standing committees are best described as

  a) specially appointed investigative bodies
  b) joint committees of the two houses of Congress
  c) committees created for each session
  d) permanent subject-matter committees
  e) advisory staff agencies

Question #9: Most of the individual protections of the Bill of Rights now apply to the states because of the Supreme Court's interpretation of the Constitution's

  a) Preamble
  b) necessary and proper clause
  c) supremacy clause
  d) Tenth Amendment
  e) Fourteenth Amendment

Question #10: The "Miranda warning" represents an attempt to protect criminal suspects against

  a) unfair police interrogation
  b) biased jury selection
  c) imprisonment without trial
  d) illegal wiretapping
  e) unjustified police surveillance

Essay Question: The framers of the Constitution intended the Supreme Court to be politically insulated. Insulated. Despite this intent, the Supreme Court is not completely insulated from political influences.

  a) Identify a power exercised by the Supreme Court that acts as a check on another branch of the federal government.
  b) Explain how each of the following can limit the independence of the Supreme Court
      • Congress
      • President

Office of the Illinois Lieutenant Governor
Spring 2018 Pilot Program
AP U.S. Government and Politics
Pre-Test
ANSWER KEY

Multiple Choice: 1 pt. each

1. **D**
2. **C**
3. **B**
4. **E**
5. **E**
6. **B**
7. **D**
8. **D**
9. **E**
10. **A**

Essay Question: 3 pts.

Part (a): 1 pt.

One point is earned for identifying a power exercised by the Supreme Court that acts as a check on another branch of the federal government.
- Judicial review
- Power to declare governmental actions unconstitutional
- Power to overrule/uphold laws passed by Congress or actions taken by the president or bureaucracy

Part (b): 2 pts.

One point is earned for an explanation of how Congress can limit the Supreme Court's independence.
- Proposing constitutional amendments or passing legislation
- Impeaching justices
- Setting the operating budget of the Supreme Court
- Increasing or decreasing the number of justices
- Changing the appellate jurisdiction of the Supreme Court

One point is earned for an explanation of how the president can limit the Supreme Court's independence.
- Refusing to enforce judicial decisions
- Proposing legislation or issuing executive orders to limit the effect of Supreme Court decisions
- Making public statements/exerting pressure

Questions 1-3 refer to the excerpt below.

"We conclude that in the field of public education the doctrine of 'separate but equal' has no place. Separate educational facilities are inherently unequal."

> Chief Justice Earl Warren, writing the unanimous opinion of the United States
> Supreme Court in *Brown v. Board of Education of Topeka*, 1954

Question #1: Which of the following was the most immediate result of the decision excerpted?

a) Radicals critiqued government actions as doing too little to transform the racial status quo.
b) Education advocates raised awareness of the effect of poverty on students' opportunities.
c) Civil rights activists became increasingly divided over tactical and philosophical issues.
d) Segregationists in southern states temporarily closed many public schools in an effort to resist the decision.

Question #2: The decision excerpted most directly reflected a growing belief after the Second World War that the power of the federal government should be used to

a) promote greater racial justice
b) revitalize cities
c) foster economic opportunity
d) defend traditional visions of morality

Question #3: The Brown decision reversed which of the following earlier decisions?

a) *Marbury v. Madison*, which established the principle of judicial review
b) *Worcester v. Georgia*, which established that the federal government rather than individual states had authority in American Indian affairs
c) *Dred Scott v. Sandford*, which proclaimed that slaves could not be citizens
d) *Plessy v. Ferguson*, which endorsed racial segregation laws

Questions 4 and 5 refer to the excerpt below.

"The system of quotas . . . was the first major pillar of the Immigration Act of 1924. The second provided for the exclusion of persons ineligible to citizenship. . .. Ineligibility to citizenship and exclusion applied to the peoples of all the nations of East and South Asia. Nearly all Asians had already been excluded from immigration. . .. The exclusion of persons ineligible to citizenship in 1924 . . . completed Asiatic exclusion. . .. Moreover, it codified the principle of racial exclusion into the main body of American immigration and naturalization law."

Mae M. Ngai, historian, Impossible Subjects: Illegal Aliens and the
Making of Modern America, 2004

Question #4: The Immigration Act of 1924 most directly reflected

    a) cultural tensions between scientific modernism and religious fundamentalism in the 1920s
    b) conflicts arising from the migration of African Americans to urban centers in the North
    c) the emergence of an increasingly national culture in the 1920s shaped by art, cinema, and mass media
    d) social tensions emerging from the First World War

Question #5: Which of the following evidence would best support Ngai's argument in the excerpt?

    a) Census data showing the changing percentages of the foreign-born population from 1920 to 1930
    b) Narratives describing the challenges of immigrant family life in the 1920s
    c) Diplomatic correspondence reflecting the increasing isolationism of United States foreign policy in the 1920s and 1930s
    d) Census data revealing the Great Migration of African Americans to cities in the North and West in the 1920s

Questions 6 and 7 refer to the excerpt below.

"I believe that it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures. I believe we must assist free peoples to work out their own destinies in their own way. I believe that our help should be primarily through economic and financial aid which is essential to economic stability and orderly political processes."

> President Harry Truman, address before a joint session of Congress articulating
> what would become known as the Truman Doctrine, 1947

Question #6: In his statement Truman had the goal of

    a) restraining communist military power and ideological influence
    b) creating alliances with recently decolonized nations
    c) reestablishing the principle of isolationism
    d) avoiding a military confrontation with the Soviet Union

Question #7: Truman issued the doctrine primarily in order to

    a) support decolonization in Asia and Africa
    b) support United States allies in Latin America
    c) protect United States interests in the Middle East
    d) bolster noncommunist nations, particularly in Europe

Questions 8-10 refer to the poster below.

Question #8: The poster most directly reflects the
   a) wartime mobilization of United States society
   b) emergence of the United States as a leading world power
   c) expanded access to consumer goods during wartime
   d) wartime repression of civil liberties

Question #9: The poster was intended to
   a) persuade women to enlist in the military
   b) promote the ideals of republican motherhood
   c) advocate for the elimination of sex discrimination in employment
   d) convince women that they had an essential role in the war effort

Question #10: Which of the following represents a later example of the change highlighted in the poster?
   a) Feminist calls for equal economic opportunities in the 1970s
   b) The growing feminist protests against United States military engagements abroad in the 1970s
   c) The increasing inability of the manufacturing sector to create jobs for women in the 1970s and 1980s
   d) The growing popular consensus about appropriate women's roles in the 1980s and 1990s

Essay Question: Answer (a), (b), and (c).

   a) Briefly explain ONE important way in which the Second World War (1939–1945) transformed the relationship of the United States with the rest of the world.
   b) Briefly explain ONE important way in which the Second World War transformed United States society.
   c) Briefly explain ANOTHER important way in which the Second World War transformed United States society.

Multiple Choice: 1 pt. each

11. **D**
12. **A**
13. **D**
14. **D**
15. **A**
16. **A**
17. **D**
18. **A**
19. **D**
20. **A**

Essay Question: 3 pts.

Scoring Guide
0–3 points

Score 3
Response accomplishes all three tasks set by the question.

Score 2
Response accomplishes two of the tasks set by the question.

Score 1
Response accomplishes one of the tasks set by the question.

Score 0
Response accomplishes none of the tasks set by the question.

Score NR
No response. Response is completely blank.

Scoring Notes
a) Response briefly explains ONE important way in which the Second World War (1939–1945) transformed the relationship of the United States with the rest of the world.

Examples of responses to (a) that would earn the point:
- The United States emerged from the Second World War as a superpower as a result of military and technological advancements.

- The development and use of the atomic bomb, threat of atomic/nuclear war, start of atomic race.
- The United States became the "Arsenal of democracy."
- The United States became the world's leading industrial power at the time when the rest of the world had to rebuild infrastructure damaged during the Second World War.
- The Second World War led to economic, political, and military global dominance of the United States ("most powerful nation on earth" and advent of "American century").
- The United States public accepted and/or supported an internationalist/interventionist foreign policy.
- The United States was no longer isolationist and became interventionist as a result of policy change.
- The United States lead role in the United Nations helped make it a new world power.
- Disagreements between the United States and the Soviet Union at Yalta and in the immediate postwar era led to the Cold War/bipolar world.
- The United States came to the aid of democratic governments throughout the world (e.g., Truman Doctrine, Marshall Plan).

b) and **c)** Response briefly explains TWO important ways in which the Second World War transformed United States society.

Examples of responses to (b) that would earn the point:

Scoring Note: The explanations in (b) and (c) need to be clearly connected to the war to earn the point.
- Wartime mobilization led to end of the Great Depression; scientific, technological and industrial advances; and an economic boom at home.
- The war led to a period of postwar economic growth and contributed to a Baby Boom generation.
- The G.I. Bill of Rights (Servicemen's Readjustment Act of 1944) contributed to the postwar economic growth.
- The war led to efforts to extend democratic values at home (e.g., demands for civil rights, Double V campaign, desegregation of the armed forces in 1948, women's rights — Rosie the Riveter).
- Nationalism/patriotism rose as a result of the war (e.g., victory bonds, victory gardens, Four Freedoms Speech).
- The war led to debates/conflicts over civil liberties (e.g., Japanese internment).
- The war led to debates/conflicts over workers' rights, unionization, and an antiunion movement.
- Improved positions for women and minorities in workforce during war.
- Women's work viewed in a new light during war, women recruited for war work, jobs previously held by men (e.g., Rosie the Riveter).
- Federal government created Federal Employment Practices Commission (FEPC) to lessen racial discrimination in wartime work/defense industry jobs; resulted from pressure by A. Philip Randolph's threatened March on Washington.

Lt. Governor Advanced Placement and Distance Education Pilot Program (Spring 2018)

Introduction

In order to address the overall lack of participation of rural school students taking Advanced Placement exams, the Office of Lt. Governor Evelyn Sanguinetti organized a pilot program to evaluate the effectiveness of Advanced Placement courses taught using distance education compared to courses delivered in a traditional, face-to-face setting. Through a partnership with the Illinois Virtual School (IVS), the Spring 2018 pilot program conducted a pretest-posttest control-group design study using rural students as participants.

In addition to collecting quantitative data from prestests and posttests, the pilot program is also analyzing qualitative data in relation to student experience, which is the purpose of this questionnaire. Please take the time to express your views on your AP courses experience, both in terms of what you approved of and what improvements you believe are warranted for the future.

Above all, thank you for your participation in the this necessary pilot program.

0 of 40 answered

1. What high school do you attend?
   a. Answer: Small Comment Box

2. What COUNTY is your high school in?
   a. Answer: Small Comment Box

3. What grade are you?
   a. Answer 1: Freshman
   b. Answer 2; Sophomore
   c. Answer 3: Junior
   d. Answer 4: Senior

4. What is your gender?
   a. Answer 1: Male
   b. Answer 2: Female
   c. Answer 3: Prefer not to say

5. Have you taken an Advanced Placement (AP) course previously?
   a. Answer 1: Yes
   b. Answer 2: No

6. If you answered YES, which AP course(s) have you PREVIOUSLY taken?
    a. Answer: Small Comment Box

7. Which Advanced Placement course did you take this semester?
    a. Answer 1: AP U.S. Government & Politics
    b. Answer 2: AP U.S. History

8. Are you CURRENTLY enrolled in your respective AP course?
    a. Answer 1: Yes
    b. Answer 2: No

9. Describe what caused you to NOT continue taking the AP course?
    a. Answer: Large Comment Box

10. Did you take your respective AP course ONLINE or IN-PERSON?
    a. Answer 1: In-Person
    b. Answer 2: Online

11. Have you ever taken an online course BEFORE this experience?
    a. Answer 1: Yes
    b. Answer 2: No

12. Is your Illinois Virtual School (IVS) course a part of your daily/block class schedule?
    a. Answer 1: Yes
    b. Answer 2: No

13. If and when you worked on this course at home, how would you assess your home's broadband connectivity?
    a. Answer 1: Very Strong
    b. Answer 2: Strong
    c. Answer 3: Average
    d. Answer 4: Weak
    e. Answer 5: Very Weak
    f. Answer 6: No Home Internet Access

14. What did you LIKE about how lessons were DELIVERED in your AP course?
    a. Answer: Large Comment Box

15. What did you DISLIKE about how lessons were DELIVERED in your AP course?
    a. Answer: Large Comment Box

16. Where did you work on your course?
    a. Answer 1: School only
    b. Answer 2: Home only
    c. Answer 3: Both school and home
    d. Answer 4: Other (please specific)

17. How much time did you spend working on this course per WEEK during the BEGINNING of the semester?
    a. Answer 1: Less than 1 hour
    b. Answer 2: More than 1 but less than 2 hours
    c. Answer 3: More than 2 but less than 3 hours
    d. Answer 4: More than 3 but less than 4 hours
    e. Answer 5: More than 4 but less than 5 hours
    f. Answer 6: More than 5 hours

18. How much time do you CURRENTLY spend working on this course per WEEK?
    a. Answer 1: Less than 1 hour
    b. Answer 2: More than 1 but less than 2 hours
    c. Answer 3: More than 2 but less than 3 hours
    d. Answer 4: More than 3 but less than 4 hours
    e. Answer 5: More than 4 but less than 5 hours
    f. Answer 6: More than 5 hours

19. Describe which details of your AP course you APPRECIATED.
    a. Answer: Large Comment Box

20. Describe which details of your AP course you believe could be IMPROVED upon.
    a. Answer: Large Comment Box

21. Did you feel MOTIVATED while taking your respective AP course?
    a. Answer 1: Yes
    b. Answer 2: No

22. Describe how the course DID or DID NOT motivate you.
    a. Answer: Large Comment Box

23. Describe your level of understanding of your AP course's CONTENT BEFORE taking the course
    a. Answer 1: Very Strong
    b. Answer 2: Strong
    c. Answer 3: Average
    d. Answer 4: Weak
    e. Answer 5: Very Weak

24. Describe your CURRENT level of understanding of your AP course's CONTENT.
    a. Answer 1: Very Strong
    b. Answer 2: Strong
    c. Answer 3: Average
    d. Answer 4: Weak
    e. Answer 5: Very Weak

25. It was easy to find information I needed in the course
    a. Answer 1: Strongly Agree
    b. Answer 2: Agree
    c. Answer 3: Disagree
    d. Answer 4: Strongly Disagree

26. The activities in this course made me think and helped me learn what I needed to learn
    a. Answer 1: Strongly Agree
    b. Answer 2: Agree
    c. Answer 3: Disagree
    d. Answer 4: Strongly Disagree

27. The course activities were too difficult
    a. Answer 1: Strongly Agree
    b. Answer 2: Agree
    c. Answer 3: Disagree
    d. Answer 4: Strongly Disagree

28. The course activities were too easy
    a. Answer 1: Strongly Agree
    b. Answer 2: Agree
    c. Answer 3: Disagree
    d. Answer 4: Strongly Disagree

29. The course activities were appropriate for my level of understanding
    a. Answer 1: Strongly Agree
    b. Answer 2: Agree
    c. Answer 3: Disagree
    d. Answer 4: Strongly Disagree

30. My teacher was available and easy to contact
    a. Answer 1: Strongly Agree
    b. Answer 2: Agree
    c. Answer 3: Disagree
    d. Answer 4: Strongly Disagree

31. Describe the type of support you received from your AP instructor during the course.
    a. Answer: Large Comment Box

32. How easy was it for you to utilize outside resources to better understand your AP course's content DURING CLASS TIME?
    a. Answer: Large Comment Box

33. How often did you seek help from your instructor regarding questions you had with the AP course?
    a. Answer 1: Extremely Often
    b. Answer 2: Often
    c. Answer 3: Somewhat
    d. Answer 4: Not Often
    e. Answer 5: Never

34. Describe the level of COMMUNICATION you had with your INSTRUCTOR throughout the course.
    a. Answer 1: Very Strong
    b. Answer 2: Strong
    c. Answer 3: Average
    d. Answer 4: Weak
    e. Answer 5: Very Weak

35. How could the COMMUNICATION you had with your INSTRUCTOR been IMPROVED upon?
    a. Answer: Large Comment Box

36. How often did you seek help from your classmates regarding questions you had with the AP course?
    a. Answer 1: Extremely Often
    b. Answer 2: Often
    c. Answer 3: Somewhat
    d. Answer 4: Not Often
    e. Answer 5: Never

37. Describe the level of COMMUNICATION you had with your CLASSMATES throughout the course.
    a. Answer 1: Very Strong
    b. Answer 2: Strong
    c. Answer 3: Average
    d. Answer 4: Weak
    e. Answer 5: Very Weak

38. How could the COMMUNICATION you had with your CLASSMATES been IMPROVED upon?
    a. Answer: Large Comment Box

39. Do you prefer taking courses ONLINE or IN-PERSON (Explain your answer)?
    a. Answer: Large Comment Box

40. Would you RECOMMEND this course to somebody (Explain your answer)?
    a. Answer: Large Comment Box